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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,606	09/08/2003	David A. Beauchaine	039035/261789	1765
826 7590 01/18/2007 ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			EXAMINER LEUNG, JENNIFER A	
			ART UNIT	PAPER NUMBER
			1764	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/18/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/657,606

Applicant(s)

BEAUCHAINE ET AL.

Examiner

Jennifer A. Leung

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 20-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9-8-03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of Group II, claims 12-19, in the reply filed on November 10, 2006 is acknowledged. However, because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-11 and 20-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Cecil et al. (US 3,536,522).

Regarding claims 12, 14, 18 and 19, Cecil et al. (see Figure; column 2, lines 31-62; column 3, line 65 to column 4, line 54) discloses an apparatus comprising:

a vessel (i.e., a cylindrical quartz vessel 25) defining an inlet (i.e., at nipple 27) and an outlet (i.e., at nipple 26);

a plurality of pieces of an oxidizable material (i.e., a particulate bed of silicon 24) disposed within the vessel 25, wherein the material is selected so as to oxidize upon exposure to oxygen in the gas such that the gas exiting the vessel through the outlet has less oxygen than the

Art Unit: 1764

gas entering the vessel through the inlet (see column 4, lines 4-11); and

a heater (i.e., electrical resistance coil **31**) in thermal communication with the vessel **25** to heat the plurality of pieces of oxidizable material **24**.

Regarding claim 13, the apparatus of Cecil et al. meets the claim, because silicon **24** is a material in which a resulting oxide layer is etchable upon exposure to an etchant, as defined by Applicants (for example, see Specification page 4, last paragraph). Please note that the resulting oxide layer and the etchant are not considered part of the apparatus.

Regarding claim 15, the plurality of pieces of oxidizable material **24** are of different sizes (i.e., particles having diameters ranging from ¼" to 100 microns, see column 3, lines 69-72).

Regarding claims 16 and 17, heater **31** is proximate to and at least partially surrounds the vessel **25** (see Figure), and heater **31** is capable of maintaining the material **24** at a temperature between about 600 °C and 1200 °C (see column 3, lines 72-75; column 4, lines 24-34).

Instant claims 12-19 structurally read on the apparatus of Cecil et al.

3. Claims 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (US 5,213,767).

Regarding claims 12 and 14, Smith et al. (see FIGs. 1-3; column 3, line 10 to column 4, line 56) discloses an apparatus comprising:

a vessel (i.e., cylinder or column **10**) defining an inlet **11** and an outlet **12**;

a plurality of pieces of an oxidizable material disposed within the vessel (i.e., a bottom section **16** containing silicon, see column 3, lines 22-48); and

a heater (i.e., an electrically heated furnace **13**) in thermal communication with the vessel **10** to heat the plurality of pieces of oxidizable material **16**.

Regarding claim 13, the apparatus of Smith et al. meets the claim, because silicon **16** is a material in which a resulting oxide layer is etchable upon exposure to an etchant, as defined by Applicants (for example, see Specification page 4, last paragraph). Please note that the resulting oxide layer and the etchant are not considered part of the apparatus.

Regarding claim 15, the pieces of silicon **16** are of different sizes (column 3, lines 42-51).

Regarding claims 16 and 17, the heater **13** is proximate to and at least partially surrounds the vessel **10** (see figures), and the heater **13** is capable of maintaining the material **16** at a temperature between about 600 °C and 1200 °C (see column 3, lines 52-54).

Regarding claims 18 and 19, the vessel **10** is formed of a material that is non-reactive with the gas, such as quartz (see column 3, lines 54-58).

Instant claims 12-19 structurally read on the apparatus of Smith et al.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1764

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jennifer A. Leung  
January 9, 2007